

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A method for identifying compounds that alter one or more biological activities of CD40, comprising:

(a) mixing a test compound with a polypeptide selected from the group consisting of (i) a NEMO polypeptide comprising amino acids 287 through 419 SEQ ID NO:2, (ii) a fragment of a NEMO polypeptide according to (i) that is capable of binding a CYLD polypeptide according to SEQ ID NO:4 or fragment or variant thereof, and (iii) variants of the NEMO polypeptides of (i) and (ii); and

(b) determining whether the test compound alters the ability of NEMO to bind CYLD.

2. A method for identifying compounds that inhibit binding of NEMO and CYLD comprising:

(a) mixing a test compound with a polypeptide selected from the group consisting of (i) a NEMO polypeptide comprising amino acids 287 through 419 SEQ ID NO:2, (ii) a fragment of a NEMO polypeptide according to (i) that is capable of binding a CYLD polypeptide according to SEQ ID NO:4, and (iii) variants of the NEMO polypeptides of (i) and (ii), and a binding partner of said NEMO polypeptide selected from the group consisting of (iv) a CYLD polypeptide according to SEQ ID NO:4, (v) a fragment of a CYLD polypeptide according to SEQ ID NO:4 that is capable of binding a NEMO polypeptide of (i), (ii), or (iii), and (vi) a variant of the CYLD polypeptides of (iv) and (v) that is capable of binding a NEMO polypeptide of (i), (ii), or (iii); and

(b) determining whether the test compound inhibits the binding activity of said NEMO and CYLD polypeptides.

3. A method for producing information comprising the identity of a compound that alters one or more biological activities of CD40, the method comprising identifying one or more compounds that alter NEMO/CYLD binding activity.

4. The method of claim 3 wherein the compound decreases the binding of NEMO to CYLD.

5. The method of claim 3 wherein the compound increases the binding of NEMO to CYLD.

6. Information produced according to the method of claim 3, said information comprising the identity of a compound that alters the binding of NEMO to CYLD.

7. The information of claim 6 wherein the information is embodied in a storage medium selected from the group consisting of the brain of a living organism, paper, magnetic tape, optical tape, floppy disks, compact disks, computer system hard drives, and computer memory units.

8. A database comprising the information of claim 7.

9. The information of claim 7 wherein the information is embodied in a computer-readable medium.

10. The information of claim 7 wherein the information is embodied in a human-readable medium.

11. A computer system comprising a database containing records pertaining to a plurality of compounds, wherein the records comprise results of an assay according to claim 1, and a user interface allowing a user to access information regarding the plurality of compounds.

12. A computer system comprising a database containing records pertaining to a plurality of compounds, wherein the records comprise results of an assay according to claim 2, and a user interface allowing a user to access information regarding the plurality of compounds.

13. A computer system for storing and retrieving data on a plurality of compounds, the computer system comprising:

(a) input means for entering data for the compounds into a storage medium;

a processor for creating an individual record for each compound, the processor assigning specific identifying values for each compound;

(b) means for selecting one or more of the records based on results in an assay;
and

(c) means for transmitting information in the record or records to an output device to produce a report.

14. The system of claim 13 further comprising a video display unit.

15. The computer system of claim 13 where the report is in human-readable form.

16. The computer system of claim 14 where the report is in human-readable form.

17. A method of using the computer system of claim 13 to select one or more compounds for testing from a plurality of compounds having records stored in a database, the method comprising: displaying a list of said records or a field for entering information identifying one or more of said records; and selecting one or more of the records from the list or the record or records identified by entering information in the field.

18. A method of operating a computer system for analyzing compounds that modulate the interaction of NEMO and CYLD, the method comprising:

(a) entering data relating to a plurality of compounds into a storage medium;
processing the data to create an individual record for each compound;

(b) testing compounds for the ability to modulate binding of NEMO to CYLD;
and

(c) communicating results from the testing into the storage medium such that results for each compound are associated with the individual record for that compound.

19. The method of claim 18 wherein the storage medium comprises one or more computer memory units.

20. The method of claim 19 wherein the computer system further comprises a video display unit.

21. A database comprising records generated according to the method of claim 18.

22. A method of selecting compounds that alter one or more biological activities of CD40, comprising compiling a database according to claim 21, analyzing the testing results, and selecting one or more compounds.

23. A method for increasing one or more biological activities of CD40 comprising providing at least one compound selected according to the method of claim 22.

24. A method for decreasing one or more biological activities of CD40 comprising providing at least one compound selected according to the method of claim 22.